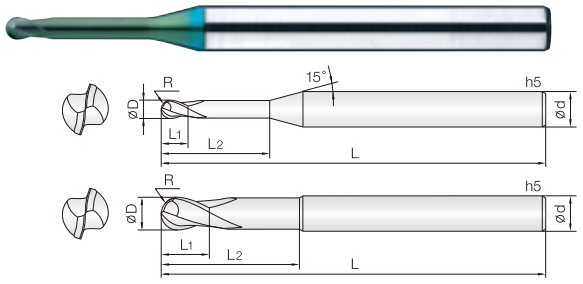
# 2JJRB

## 2 Flutes JJ Rib Ball End Mills for Hardened Steels
## 2날 고경도재 가공용 제이제이 리브 볼 엔드밀




- **고경도강(HRc52~70), 프리하든강 계열의 고정밀 가공 엔드밀**
- 고함량 실리콘계 코팅(Si) 처리하여 내마모성이 우수합니다.
- 고정밀 공차 적용으로 초정밀 가공에 적합합니다.
- 날부인선의 조도가 뛰어나 피삭재의 면조도가 우수합니다.
- 초미립자 초경합금(0.2㎛)을채택, 고속절삭시 뛰어난 성능을 발휘합니다.

- **Endmills for pre-hardened and hardened steel(HRc52~70)**
- Good wear resistance by high quality Si-based PVD coating.
- High precise edge tolerance.
- Very nice work surface finish.
- Outstanding performance at high speed machining by ultra fine (0.2㎛) WC grade.

2 | UWC 초미립자 | TISIN-S Coating | R ± 0.005 (0.05 ~ 2.5R) | R ± 0.01 (3 ~ 6R) | 30° Helix Angle | CUTTING DATA (282P)

| D Size | D Tolerance |
|---|---|
| Ø 0.1 ~ 0.15 | +0 ~ -0.005mm |
| Ø 0.2 ~ 5 | +0 ~ -0.01mm |
| Ø 6 ~ 12 | -0.005 ~ -0.015mm |

단위: mm

| Order Number | 날경 Diameter R × D | 날장 Length of cut L1 | 유효장 Effective Length L2 | 전장 Overall Length L | 생크 Shank Dia d | 비고 |
|---|---|---|---|---|---|---|
| 2JJRB 001 003 S04 | 0.05R X 0.1 | 0.15 | 0.3 | 40 | 4 | |
| 2JJRB 001 005 S04 | 0.05R X 0.1 | 0.15 | 0.5 | 40 | 4 | |
| New 2JJRB 0015 003 S04 | 0.075R X 0.15 | 0.15 | 0.3 | 40 | 4 | |
| New 2JJRB 0015 005 S04 | 0.075R X 0.15 | 0.15 | 0.5 | 40 | 4 | |
| New 2JJRB 0015 010 S04 | 0.075R X 0.15 | 0.15 | 1 | 40 | 4 | |
| 2JJRB 002 005 S04 | 0.1R X 0.2 | 0.2 | 0.5 | 40 | 4 | |
| 2JJRB 002 010 S04 | 0.1R X 0.2 | 0.2 | 1 | 40 | 4 | |
| 2JJRB 002 015 S04 | 0.1R X 0.2 | 0.2 | 1.5 | 40 | 4 | |
| 2JJRB 002 020 S04 | 0.1R X 0.2 | 0.2 | 2 | 40 | 4 | |
| 2JJRB 002 025 S04 | 0.1R X 0.2 | 0.2 | 2.5 | 40 | 4 | |
| 2JJRB 002 030 S04 | 0.1R X 0.2 | 0.2 | 3 | 40 | 4 | |
| New 2JJRB 0025 005 S04 | 0.125R X 0.25 | 0.25 | 0.5 | 40 | 4 | |
| New 2JJRB 0025 010 S04 | 0.125R X 0.25 | 0.25 | 1 | 40 | 4 | |
| New 2JJRB 0025 015 S04 | 0.125R X 0.25 | 0.25 | 1.5 | 40 | 4 | |
| New 2JJRB 0025 020 S04 | 0.125R X 0.25 | 0.25 | 2 | 40 | 4 | |
| New 2JJRB 0025 025 S04 | 0.125R X 0.25 | 0.25 | 2.5 | 40 | 4 | |
| New 2JJRB 0025 030 S04 | 0.125R X 0.25 | 0.25 | 3 | 40 | 4 | |
| 2JJRB 003 010 S04 | 0.15R X 0.3 | 0.3 | 1 | 40 | 4 | |
| 2JJRB 003 015 S04 | 0.15R X 0.3 | 0.3 | 1.5 | 40 | 4 | |
| 2JJRB 003 020 S04 | 0.15R X 0.3 | 0.3 | 2 | 40 | 4 | |
| 2JJRB 003 025 S04 | 0.15R X 0.3 | 0.3 | 2.5 | 40 | 4 | |
| 2JJRB 003 030 S04 | 0.15R X 0.3 | 0.3 | 3 | 40 | 4 | |
| 2JJRB 003 035 S04 | 0.15R X 0.3 | 0.3 | 3.5 | 40 | 4 | |
| 2JJRB 003 040 S04 | 0.15R X 0.3 | 0.3 | 4 | 40 | 4 | |
| 2JJRB 003 050 S04 | 0.15R X 0.3 | 0.3 | 5 | 40 | 4 | |
| 2JJRB 004 010 S04 | 0.2R X 0.4 | 0.4 | 1 | 40 | 4 | |
| 2JJRB 004 015 S04 | 0.2R X 0.4 | 0.4 | 1.5 | 40 | 4 | |
| 2JJRB 004 020 S04 | 0.2R X 0.4 | 0.4 | 2 | 40 | 4 | |
| 2JJRB 004 025 S04 | 0.2R X 0.4 | 0.4 | 2.5 | 40 | 4 | |
| 2JJRB 004 030 S04 | 0.2R X 0.4 | 0.4 | 3 | 40 | 4 | |
| 2JJRB 004 035 S04 | 0.2R X 0.4 | 0.4 | 3.5 | 40 | 4 | |
| 2JJRB 004 040 S04 | 0.2R X 0.4 | 0.4 | 4 | 40 | 4 | |
| 2JJRB 004 045 S04 | 0.2R X 0.4 | 0.4 | 4.5 | 40 | 4 | |
| 2JJRB 004 050 S04 | 0.2R X 0.4 | 0.4 | 5 | 40 | 4 | |
| 2JJRB 004 060 S04 | 0.2R X 0.4 | 0.4 | 6 | 40 | 4 | |
| 2JJRB 004 080 S04 | 0.2R X 0.4 | 0.4 | 8 | 40 | 4 | |
| 2JJRB 005 010 S04 | 0.25R X 0.5 | 0.5 | 1 | 45 | 4 | |
| 2JJRB 005 010 S06 | 0.25R X 0.5 | 0.5 | 1 | 50 | 6 | |
| 2JJRB 005 015 S04 | 0.25R X 0.5 | 0.5 | 1.5 | 45 | 4 | |
| 2JJRB 005 020 S04 | 0.25R X 0.5 | 0.5 | 2 | 45 | 4 | |
| 2JJRB 005 020 S06 | 0.25R X 0.5 | 0.5 | 2 | 50 | 6 | |
| 2JJRB 005 025 S04 | 0.25R X 0.5 | 0.5 | 2.5 | 45 | 4 | |
| 2JJRB 005 030 S04 | 0.25R X 0.5 | 0.5 | 3 | 45 | 4 | |
| 2JJRB 005 030 S06 | 0.25R X 0.5 | 0.5 | 3 | 50 | 6 | |
| 2JJRB 005 035 S04 | 0.25R X 0.5 | 0.5 | 3.5 | 45 | 4 | |
| 2JJRB 005 040 S04 | 0.25R X 0.5 | 0.5 | 4 | 45 | 4 | |
| 2JJRB 005 040 S06 | 0.25R X 0.5 | 0.5 | 4 | 50 | 6 | |
| 2JJRB 005 045 S04 | 0.25R X 0.5 | 0.5 | 4.5 | 45 | 4 | |
| 2JJRB 005 050 S04 | 0.25R X 0.5 | 0.5 | 5 | 45 | 4 | |
| 2JJRB 005 050 S06 | 0.25R X 0.5 | 0.5 | 5 | 50 | 6 | |

| Order Number | 날경 Diameter R × D | 날장 Length of cut L1 | 유효장 Effective Length L2 | 전장 Overall Length L | 생크 Shank Dia d | 비고 |
|---|---|---|---|---|---|---|
| 2JJRB 005 060 S04 | 0.25R X 0.5 | 0.5 | 6 | 45 | 4 | |
| 2JJRB 005 060 S06 | 0.25R X 0.5 | 0.5 | 6 | 50 | 6 | |
| 2JJRB 005 080 S04 | 0.25R X 0.5 | 0.5 | 8 | 45 | 4 | |
| 2JJRB 005 100 S04 | 0.25R X 0.5 | 0.5 | 10 | 45 | 4 | |
| 2JJRB 005 120 S04 | 0.25R X 0.5 | 0.5 | 12 | 45 | 4 | |
| 2JJRB 006 010 S04 | 0.3R X 0.6 | 0.6 | 1 | 45 | 4 | |
| 2JJRB 006 010 S06 | 0.3R X 0.6 | 0.6 | 1 | 50 | 6 | |
| 2JJRB 006 020 S04 | 0.3R X 0.6 | 0.6 | 2 | 45 | 4 | |
| 2JJRB 006 020 S06 | 0.3R X 0.6 | 0.6 | 2 | 50 | 6 | |
| 2JJRB 006 030 S04 | 0.3R X 0.6 | 0.6 | 3 | 45 | 4 | |
| 2JJRB 006 030 S06 | 0.3R X 0.6 | 0.6 | 3 | 50 | 6 | |
| 2JJRB 006 040 S04 | 0.3R X 0.6 | 0.6 | 4 | 45 | 4 | |
| 2JJRB 006 040 S06 | 0.3R X 0.6 | 0.6 | 4 | 50 | 6 | |
| 2JJRB 006 050 S04 | 0.3R X 0.6 | 0.6 | 5 | 45 | 4 | |
| 2JJRB 006 050 S06 | 0.3R X 0.6 | 0.6 | 5 | 50 | 6 | |
| 2JJRB 006 060 S04 | 0.3R X 0.6 | 0.6 | 6 | 45 | 4 | |
| 2JJRB 006 060 S06 | 0.3R X 0.6 | 0.6 | 6 | 50 | 6 | |
| 2JJRB 006 080 S04 | 0.3R X 0.6 | 0.6 | 8 | 45 | 4 | |
| 2JJRB 006 080 S06 | 0.3R X 0.6 | 0.6 | 8 | 50 | 6 | |
| 2JJRB 006 100 S04 | 0.3R X 0.6 | 0.6 | 10 | 45 | 4 | |
| 2JJRB 006 120 S04 | 0.3R X 0.6 | 0.6 | 12 | 45 | 4 | |
| 2JJRB 006 140 S04 | 0.3R X 0.6 | 0.6 | 14 | 45 | 4 | |
| 2JJRB 007 020 S04 | 0.35R X 0.7 | 0.7 | 2 | 45 | 4 | |
| 2JJRB 007 040 S04 | 0.35R X 0.7 | 0.7 | 4 | 45 | 4 | |
| 2JJRB 007 060 S04 | 0.35R X 0.7 | 0.7 | 6 | 45 | 4 | |
| 2JJRB 007 080 S04 | 0.35R X 0.7 | 0.7 | 8 | 45 | 4 | |
| 2JJRB 007 100 S04 | 0.35R X 0.7 | 0.7 | 10 | 45 | 4 | |
| 2JJRB 007 120 S04 | 0.35R X 0.7 | 0.7 | 12 | 45 | 4 | |
| 2JJRB 008 020 S04 | 0.4R X 0.8 | 0.8 | 2 | 45 | 4 | |
| 2JJRB 008 020 S06 | 0.4R X 0.8 | 0.8 | 2 | 50 | 6 | |
| 2JJRB 008 030 S04 | 0.4R X 0.8 | 0.8 | 3 | 45 | 4 | |
| 2JJRB 008 030 S06 | 0.4R X 0.8 | 0.8 | 3 | 50 | 6 | |
| 2JJRB 008 040 S04 | 0.4R X 0.8 | 0.8 | 4 | 45 | 4 | |
| 2JJRB 008 040 S06 | 0.4R X 0.8 | 0.8 | 4 | 50 | 6 | |
| 2JJRB 008 050 S04 | 0.4R X 0.8 | 0.8 | 5 | 45 | 4 | |
| 2JJRB 008 050 S06 | 0.4R X 0.8 | 0.8 | 5 | 50 | 6 | |
| 2JJRB 008 060 S04 | 0.4R X 0.8 | 0.8 | 6 | 45 | 4 | |
| 2JJRB 008 060 S06 | 0.4R X 0.8 | 0.8 | 6 | 50 | 6 | |
| 2JJRB 008 080 S04 | 0.4R X 0.8 | 0.8 | 8 | 45 | 4 | |
| 2JJRB 008 080 S06 | 0.4R X 0.8 | 0.8 | 8 | 50 | 6 | |
| 2JJRB 008 100 S04 | 0.4R X 0.8 | 0.8 | 10 | 45 | 4 | |
| 2JJRB 008 120 S04 | 0.4R X 0.8 | 0.8 | 12 | 45 | 4 | |
| 2JJRB 009 040 S04 | 0.45R X 0.9 | 0.9 | 4 | 45 | 4 | |
| 2JJRB 009 060 S04 | 0.45R X 0.9 | 0.9 | 6 | 45 | 4 | |
| 2JJRB 009 080 S04 | 0.45R X 0.9 | 0.9 | 8 | 45 | 4 | |
| 2JJRB 009 100 S04 | 0.45R X 0.9 | 0.9 | 10 | 50 | 4 | |
| 2JJRB 009 120 S04 | 0.45R X 0.9 | 0.9 | 12 | 50 | 4 | |
| 2JJRB 010 020 S04 | 0.5R X 1 | 1 | 2 | 45 | 4 | |
| 2JJRB 010 020 S06 | 0.5R X 1 | 1 | 2 | 50 | 6 | |
| 2JJRB 010 030 S04 | 0.5R X 1 | 1 | 3 | 45 | 4 | |

단위: mm

| Order Number | 날경 Diameter R × D | 날장 Length of cut L1 | 유효장 Effective Length L2 | 전장 Overall Length L | 생크 Shank Dia d | 비고 |
|---|---|---|---|---|---|---|
| 2JJRB 010 030 S06 | 0.5R X 1 | 1 | 3 | 50 | 6 | |
| 2JJRB 010 040 S04 | 0.5R X 1 | 1 | 4 | 45 | 4 | |
| 2JJRB 010 040 S06 | 0.5R X 1 | 1 | 4 | 50 | 6 | |
| 2JJRB 010 050 S04 | 0.5R X 1 | 1 | 5 | 45 | 4 | |
| 2JJRB 010 050 S06 | 0.5R X 1 | 1 | 5 | 50 | 6 | |
| 2JJRB 010 060 S04 | 0.5R X 1 | 1 | 6 | 45 | 4 | |
| 2JJRB 010 060 S06 | 0.5R X 1 | 1 | 6 | 50 | 6 | |
| 2JJRB 010 080 S04 | 0.5R X 1 | 1 | 8 | 45 | 4 | |
| 2JJRB 010 080 S06 | 0.5R X 1 | 1 | 8 | 50 | 6 | |
| 2JJRB 010 100 S04 | 0.5R X 1 | 1 | 10 | 50 | 4 | |
| 2JJRB 010 100 S06 | 0.5R X 1 | 1 | 10 | 50 | 6 | |
| 2JJRB 010 120 S04 | 0.5R X 1 | 1 | 12 | 50 | 4 | |
| 2JJRB 010 120 S06 | 0.5R X 1 | 1 | 12 | 50 | 6 | |
| 2JJRB 010 140 S04 | 0.5R X 1 | 1 | 14 | 50 | 4 | |
| 2JJRB 010 160 S04 | 0.5R X 1 | 1 | 16 | 50 | 4 | |
| 2JJRB 010 180 S04 | 0.5R X 1 | 1 | 18 | 50 | 4 | |
| 2JJRB 010 200 S04 | 0.5R X 1 | 1 | 20 | 50 | 4 | |
| 2JJRB 010 220 S04 | 0.5R X 1 | 1 | 22 | 60 | 4 | |
| 2JJRB 010 250 S04 | 0.5R X 1 | 1 | 25 | 60 | 4 | |
| 2JJRB 012 040 S04 | 0.6R X 1.2 | 1.2 | 4 | 45 | 4 | |
| 2JJRB 012 040 S06 | 0.6R X 1.2 | 1.2 | 4 | 50 | 6 | |
| 2JJRB 012 060 S04 | 0.6R X 1.2 | 1.2 | 6 | 45 | 4 | |
| 2JJRB 012 060 S06 | 0.6R X 1.2 | 1.2 | 6 | 50 | 6 | |
| 2JJRB 012 080 S04 | 0.6R X 1.2 | 1.2 | 8 | 45 | 4 | |
| 2JJRB 012 080 S06 | 0.6R X 1.2 | 1.2 | 8 | 50 | 6 | |
| 2JJRB 012 100 S04 | 0.6R X 1.2 | 1.2 | 10 | 50 | 4 | |
| 2JJRB 012 100 S06 | 0.6R X 1.2 | 1.2 | 10 | 50 | 6 | |
| 2JJRB 012 120 S04 | 0.6R X 1.2 | 1.2 | 12 | 50 | 4 | |
| 2JJRB 012 120 S06 | 0.6R X 1.2 | 1.2 | 12 | 50 | 6 | |
| 2JJRB 012 160 S04 | 0.6R X 1.2 | 1.2 | 16 | 50 | 4 | |
| 2JJRB 012 200 S04 | 0.6R X 1.2 | 1.2 | 20 | 50 | 4 | |
| 2JJRB 012 240 S04 | 0.6R X 1.2 | 1.2 | 24 | 60 | 4 | |
| 2JJRB 014 060 S04 | 0.7R X 1.4 | 1.4 | 6 | 45 | 4 | |
| 2JJRB 014 080 S04 | 0.7R X 1.4 | 1.4 | 8 | 45 | 4 | |
| 2JJRB 014 120 S04 | 0.7R X 1.4 | 1.4 | 12 | 50 | 4 | |
| 2JJRB 014 160 S04 | 0.7R X 1.4 | 1.4 | 16 | 50 | 4 | |
| 2JJRB 015 030 S04 | 0.75R X 1.5 | 1.5 | 3 | 45 | 4 | |
| 2JJRB 015 030 S06 | 0.75R X 1.5 | 1.5 | 3 | 50 | 6 | |
| 2JJRB 015 040 S04 | 0.75R X 1.5 | 1.5 | 4 | 45 | 4 | |
| 2JJRB 015 040 S06 | 0.75R X 1.5 | 1.5 | 4 | 50 | 6 | |
| 2JJRB 015 060 S04 | 0.75R X 1.5 | 1.5 | 6 | 45 | 4 | |
| 2JJRB 015 060 S06 | 0.75R X 1.5 | 1.5 | 6 | 50 | 6 | |
| 2JJRB 015 080 S04 | 0.75R X 1.5 | 1.5 | 8 | 45 | 4 | |
| 2JJRB 015 080 S06 | 0.75R X 1.5 | 1.5 | 8 | 50 | 6 | |
| 2JJRB 015 100 S04 | 0.75R X 1.5 | 1.5 | 10 | 50 | 4 | |
| 2JJRB 015 100 S06 | 0.75R X 1.5 | 1.5 | 10 | 50 | 6 | |
| 2JJRB 015 120 S04 | 0.75R X 1.5 | 1.5 | 12 | 50 | 4 | |
| 2JJRB 015 120 S06 | 0.75R X 1.5 | 1.5 | 12 | 50 | 6 | |
| 2JJRB 015 140 S04 | 0.75R X 1.5 | 1.5 | 14 | 50 | 4 | |
| 2JJRB 015 140 S06 | 0.75R X 1.5 | 1.5 | 14 | 50 | 6 | |

| Order Number | 날경 Diameter R × D | 날장 Length of cut L1 | 유효장 Effective Length L2 | 전장 Overall Length L | 생크 Shank Dia d | 비고 |
|---|---|---|---|---|---|---|
| 2JJRB 015 160 S04 | 0.75R X 1.5 | 1.5 | 16 | 50 | 4 | |
| 2JJRB 015 160 S06 | 0.75R X 1.5 | 1.5 | 16 | 60 | 6 | |
| 2JJRB 015 180 S04 | 0.75R X 1.5 | 1.5 | 18 | 50 | 4 | |
| 2JJRB 015 200 S04 | 0.75R X 1.5 | 1.5 | 20 | 50 | 4 | |
| 2JJRB 015 220 S04 | 0.75R X 1.5 | 1.5 | 22 | 60 | 4 | |
| 2JJRB 015 250 S04 | 0.75R X 1.5 | 1.5 | 25 | 60 | 4 | |
| 2JJRB 015 300 S04 | 0.75R X 1.5 | 1.5 | 30 | 70 | 4 | |
| 2JJRB 016 060 S04 | 0.8R X 1.6 | 1.6 | 6 | 45 | 4 | |
| 2JJRB 016 080 S04 | 0.8R X 1.6 | 1.6 | 8 | 45 | 4 | |
| 2JJRB 016 120 S04 | 0.8R X 1.6 | 1.6 | 12 | 50 | 4 | |
| 2JJRB 016 160 S04 | 0.8R X 1.6 | 1.6 | 16 | 50 | 4 | |
| 2JJRB 016 200 S04 | 0.8R X 1.6 | 1.6 | 20 | 50 | 4 | |
| 2JJRB 018 060 S04 | 0.9R X 1.8 | 1.8 | 6 | 45 | 4 | |
| 2JJRB 018 080 S04 | 0.9R X 1.8 | 1.8 | 8 | 45 | 4 | |
| 2JJRB 018 120 S04 | 0.9R X 1.8 | 1.8 | 12 | 50 | 4 | |
| 2JJRB 018 160 S04 | 0.9R X 1.8 | 1.8 | 16 | 50 | 4 | |
| 2JJRB 018 200 S04 | 0.9R X 1.8 | 1.8 | 20 | 50 | 4 | |
| 2JJRB 020 040 S04 | 1R X 2 | 2 | 4 | 45 | 4 | |
| 2JJRB 020 040 S06 | 1R X 2 | 2 | 4 | 50 | 6 | |
| 2JJRB 020 060 S04 | 1R X 2 | 2 | 6 | 45 | 4 | |
| 2JJRB 020 060 S06 | 1R X 2 | 2 | 6 | 50 | 6 | |
| 2JJRB 020 080 S04 | 1R X 2 | 2 | 8 | 45 | 4 | |
| 2JJRB 020 080 S06 | 1R X 2 | 2 | 8 | 50 | 6 | |
| 2JJRB 020 100 S04 | 1R X 2 | 2 | 10 | 50 | 4 | |
| 2JJRB 020 100 S06 | 1R X 2 | 2 | 10 | 50 | 6 | |
| 2JJRB 020 120 S04 | 1R X 2 | 2 | 12 | 50 | 4 | |
| 2JJRB 020 120 S06 | 1R X 2 | 2 | 12 | 50 | 6 | |
| 2JJRB 020 140 S04 | 1R X 2 | 2 | 14 | 50 | 4 | |
| 2JJRB 020 140 S06 | 1R X 2 | 2 | 14 | 50 | 6 | |
| 2JJRB 020 160 S04 | 1R X 2 | 2 | 16 | 50 | 4 | |
| 2JJRB 020 160 S06 | 1R X 2 | 2 | 16 | 60 | 6 | |
| 2JJRB 020 180 S04 | 1R X 2 | 2 | 18 | 50 | 4 | |
| 2JJRB 020 180 S06 | 1R X 2 | 2 | 18 | 60 | 6 | |
| 2JJRB 020 200 S04 | 1R X 2 | 2 | 20 | 50 | 4 | |
| 2JJRB 020 200 S06 | 1R X 2 | 2 | 20 | 60 | 6 | |
| 2JJRB 020 220 S04 | 1R X 2 | 2 | 22 | 60 | 4 | |
| 2JJRB 020 250 S04 | 1R X 2 | 2 | 25 | 60 | 4 | |
| 2JJRB 020 300 S04 | 1R X 2 | 2 | 30 | 60 | 4 | |
| 2JJRB 025 080 S04 | 1.25R X 2.5 | 2.5 | 8 | 45 | 4 | |
| 2JJRB 025 080 S06 | 1.25R X 2.5 | 2.5 | 8 | 50 | 6 | |
| 2JJRB 025 100 S04 | 1.25R X 2.5 | 2.5 | 10 | 50 | 4 | |
| 2JJRB 025 100 S06 | 1.25R X 2.5 | 2.5 | 10 | 50 | 6 | |
| 2JJRB 025 120 S04 | 1.25R X 2.5 | 2.5 | 12 | 50 | 4 | |
| 2JJRB 025 120 S06 | 1.25R X 2.5 | 2.5 | 12 | 50 | 6 | |
| 2JJRB 025 160 S04 | 1.25R X 2.5 | 2.5 | 16 | 50 | 4 | |
| 2JJRB 025 160 S06 | 1.25R X 2.5 | 2.5 | 16 | 60 | 6 | |
| 2JJRB 025 200 S04 | 1.25R X 2.5 | 2.5 | 20 | 60 | 4 | |
| 2JJRB 025 200 S06 | 1.25R X 2.5 | 2.5 | 20 | 60 | 6 | |
| 2JJRB 025 250 S04 | 1.25R X 2.5 | 2.5 | 25 | 60 | 4 | |
| 2JJRB 025 300 S04 | 1.25R X 2.5 | 2.5 | 30 | 70 | 4 | |

# 2JJRB

## 2 Flutes JJ Rib Ball End Mills for Hardened Steels

## 2날 고경도재 가공용 제이제이 리브 볼 엔드밀

단위: mm

| Order Number | 날경 Diameter R × D | 날장 Length of cut L1 | 유효장 Effective Length L2 | 전장 Overall Length L | 생크 Shank Dia d | 비고 |
|---|---|---|---|---|---|---|
| 2JJRB 030 060 S06 | 1.5R X 3 | 3 | 6 | 50 | 6 | |
| 2JJRB 030 080 S06 | 1.5R X 3 | 3 | 8 | 50 | 6 | |
| 2JJRB 030 100 S06 | 1.5R X 3 | 3 | 10 | 50 | 6 | |
| 2JJRB 030 120 S06 | 1.5R X 3 | 3 | 12 | 50 | 6 | |
| 2JJRB 030 160 S06 | 1.5R X 3 | 3 | 16 | 60 | 6 | |
| 2JJRB 030 200 S06 | 1.5R X 3 | 3 | 20 | 60 | 6 | |
| 2JJRB 030 250 S06 | 1.5R X 3 | 3 | 25 | 65 | 6 | |
| 2JJRB 030 300 S06 | 1.5R X 3 | 3 | 30 | 70 | 6 | |
| 2JJRB 030 350 S06 | 1.5R X 3 | 3 | 35 | 75 | 6 | |
| 2JJRB 030 400 S06 | 1.5R X 3 | 3 | 40 | 80 | 6 | |
| 2JJRB 030 450 S06 | 1.5R X 3 | 3 | 45 | 90 | 6 | |
| 2JJRB 030 500 S06 | 1.5R X 3 | 3 | 50 | 100 | 6 | |
| 2JJRB 035 100 S06 | 1.75R X 3.5 | 3.5 | 10 | 50 | 6 | |
| 2JJRB 035 150 S06 | 1.75R X 3.5 | 3.5 | 15 | 60 | 6 | |
| 2JJRB 035 200 S06 | 1.75R X 3.5 | 3.5 | 20 | 60 | 6 | |
| 2JJRB 035 250 S06 | 1.75R X 3.5 | 3.5 | 25 | 65 | 6 | |
| 2JJRB 035 300 S06 | 1.75R X 3.5 | 3.5 | 30 | 70 | 6 | |
| 2JJRB 035 350 S06 | 1.75R X 3.5 | 3.5 | 35 | 75 | 6 | |
| 2JJRB 035 400 S06 | 1.75R X 3.5 | 3.5 | 40 | 80 | 6 | |
| 2JJRB 040 080 S06 | 2R X 4 | 4 | 8 | 50 | 6 | |
| 2JJRB 040 100 S06 | 2R X 4 | 4 | 10 | 50 | 6 | |
| 2JJRB 040 120 S06 | 2R X 4 | 4 | 12 | 50 | 6 | |
| 2JJRB 040 160 S06 | 2R X 4 | 4 | 16 | 60 | 6 | |
| 2JJRB 040 200 S06 | 2R X 4 | 4 | 20 | 60 | 6 | |
| 2JJRB 040 250 S06 | 2R X 4 | 4 | 25 | 65 | 6 | |
| 2JJRB 040 300 S06 | 2R X 4 | 4 | 30 | 70 | 6 | |
| 2JJRB 040 350 S06 | 2R X 4 | 4 | 35 | 75 | 6 | |
| 2JJRB 040 400 S06 | 2R X 4 | 4 | 40 | 80 | 6 | |
| 2JJRB 040 450 S06 | 2R X 4 | 4 | 45 | 90 | 6 | |
| 2JJRB 040 500 S06 | 2R X 4 | 4 | 50 | 100 | 6 | |
| 2JJRB 050 160 S06 | 2.5R X 5 | 6 | 16 | 60 | 6 | |
| 2JJRB 050 200 S06 | 2.5R X 5 | 6 | 20 | 60 | 6 | |
| 2JJRB 050 250 S06 | 2.5R X 5 | 6 | 25 | 70 | 6 | |
| 2JJRB 050 300 S06 | 2.5R X 5 | 6 | 30 | 75 | 6 | |
| 2JJRB 050 400 S06 | 2.5R X 5 | 6 | 40 | 80 | 6 | |
| 2JJRB 050 450 S06 | 2.5R X 5 | 6 | 45 | 90 | 6 | |
| 2JJRB 050 500 S06 | 2.5R X 5 | 6 | 50 | 100 | 6 | |
| 2JJRB 060 150 S06 | 3R X 6 | 10 | 15 | 55 | 6 | |
| 2JJRB 060 300 100 | 3R X 6 | 10 | 30 | 100 | 6 | |
| 2JJRB 060 500 120 | 3R X 6 | 10 | 50 | 120 | 6 | |
| 2JJRB 080 250 060 | 4R X 8 | 12 | 25 | 60 | 8 | |
| 2JJRB 080 300 100 | 4R X 8 | 12 | 30 | 100 | 8 | |
| 2JJRB 080 600 120 | 4R X 8 | 12 | 60 | 120 | 8 | |
| 2JJRB 100 300 070 | 5R X 10 | 16 | 30 | 70 | 10 | |
| 2JJRB 100 450 100 | 5R X 10 | 16 | 45 | 100 | 10 | |
| 2JJRB 100 600 130 | 5R X 10 | 16 | 60 | 130 | 10 | |
| 2JJRB 120 300 075 | 6R X 12 | 18 | 30 | 75 | 12 | |
| 2JJRB 120 500 110 | 6R X 12 | 18 | 50 | 110 | 12 | |
| 2JJRB 120 600 130 | 6R X 12 | 18 | 60 | 130 | 12 | |

# 2JJRB Cutting Condition

• RPM : rev./min • Feed : mm/min

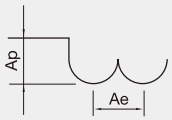
| 피삭재 Material | | 고경도강 Hardened Steels | | | | 고경도강 Hardened Steels | | | | 고경도강 Hardened Steels | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 경도 Hardness | | 55 ~ 62HRC | | | | 62 ~ 66HRC | | | | 66 ~ 70HRC | | | |
| 반경 Radius | 유효장 Effective Length | RPM | FEED | Ap Axial Depth | Ae Radial Depth | RPM | FEED | Ap Axial Depth | Ae Radial Depth | RPM | FEED | Ap Axial Depth | Ae Radial Depth |
| R 0.1 | 0.5 | 60,000 | 200 | 0.002 | 0.003 | 60,000 | 130 | 0.002 | 0.003 | 45,000 | 65 | 0.002 | 0.003 |
| 〃 | 1 | 60,000 | 200 | 0.002 | 0.003 | 60,000 | 130 | 0.002 | 0.003 | 45,000 | 65 | 0.002 | 0.003 |
| 〃 | 1.5 | 48,000 | 80 | 0.001 | 0.002 | 48,000 | 65 | 0.001 | 0.002 | 36,000 | 30 | 0.001 | 0.002 |
| 〃 | 2 | 48,000 | 50 | 0.001 | 0.001 | 48,000 | 40 | 0.001 | 0.001 | 36,000 | 20 | 0.001 | 0.001 |
| R 0.15 | 1 | 45,000 | 310 | 0.004 | 0.007 | 43,500 | 180 | 0.003 | 0.005 | 32,500 | 90 | 0.003 | 0.005 |
| 〃 | 1.5 | 45,000 | 310 | 0.004 | 0.007 | 43,500 | 180 | 0.003 | 0.005 | 32,500 | 90 | 0.003 | 0.005 |
| 〃 | 2 | 45,000 | 190 | 0.003 | 0.005 | 43,500 | 110 | 0.002 | 0.004 | 32,500 | 55 | 0.002 | 0.004 |
| 〃 | 3 | 32,000 | 80 | 0.002 | 0.004 | 32,000 | 65 | 0.001 | 0.002 | 24,000 | 30 | 0.001 | 0.002 |
| R 0.2 | 1 | 37,500 | 420 | 0.007 | 0.012 | 35,000 | 240 | 0.005 | 0.008 | 26,250 | 120 | 0.005 | 0.008 |
| 〃 | 2 | 37,500 | 420 | 0.007 | 0.012 | 35,000 | 240 | 0.005 | 0.008 | 26,250 | 120 | 0.005 | 0.008 |
| 〃 | 3 | 31,900 | 210 | 0.004 | 0.008 | 30,500 | 160 | 0.003 | 0.005 | 22,800 | 80 | 0.002 | 0.005 |
| 〃 | 4 | 25,500 | 150 | 0.002 | 0.004 | 24,300 | 120 | 0.002 | 0.004 | 18,200 | 60 | 0.002 | 0.004 |
| R 0.25 | 1 | 33,000 | 530 | 0.010 | 0.020 | 30,000 | 300 | 0.007 | 0.010 | 22,500 | 150 | 0.007 | 0.010 |
| 〃 | 2 | 33,000 | 530 | 0.010 | 0.020 | 30,000 | 300 | 0.007 | 0.010 | 22,500 | 150 | 0.007 | 0.010 |
| 〃 | 3 | 31,000 | 400 | 0.007 | 0.010 | 28,550 | 230 | 0.005 | 0.008 | 21,400 | 115 | 0.005 | 0.008 |
| 〃 | 4 | 27,150 | 150 | 0.003 | 0.008 | 25,650 | 100 | 0.002 | 0.005 | 19,900 | 50 | 0.002 | 0.005 |
| 〃 | 5 | 24,200 | 110 | 0.002 | 0.005 | 23,500 | 75 | 0.002 | 0.004 | 17,600 | 35 | 0.002 | 0.004 |
| 〃 | 6 | 21,300 | 75 | 0.001 | 0.003 | 21,300 | 50 | 0.001 | 0.002 | 16,000 | 25 | 0.001 | 0.002 |
| 〃 | 8 | 15,900 | 40 | 0.001 | 0.002 | 15,900 | 25 | 0.001 | 0.002 | 11,950 | 12 | 0.001 | 0.002 |
| R 0.3 | 1 | 30,000 | 1,500 | 0.030 | 0.130 | 26,500 | 1,000 | 0.015 | 0.090 | 20,000 | 500 | 0.015 | 0.090 |
| 〃 | 2 | 30,000 | 1,200 | 0.020 | 0.100 | 26,500 | 800 | 0.010 | 0.075 | 20,000 | 400 | 0.010 | 0.075 |
| 〃 | 3 | 30,000 | 800 | 0.015 | 0.090 | 26,500 | 520 | 0.008 | 0.065 | 20,000 | 260 | 0.008 | 0.065 |
| 〃 | 4 | 30,000 | 500 | 0.010 | 0.075 | 26,500 | 340 | 0.006 | 0.050 | 20,000 | 170 | 0.006 | 0.050 |
| 〃 | 5 | 25,000 | 390 | 0.007 | 0.050 | 23,000 | 260 | 0.005 | 0.040 | 18,000 | 130 | 0.005 | 0.040 |
| 〃 | 6 | 21,000 | 320 | 0.005 | 0.040 | 19,500 | 210 | 0.004 | 0.030 | 15,000 | 105 | 0.004 | 0.030 |
| 〃 | 8 | 16,000 | 240 | 0.003 | 0.020 | 16,000 | 160 | 0.003 | 0.020 | 12,000 | 80 | 0.003 | 0.020 |
| 〃 | 10 | 14,900 | 175 | 0.002 | 0.015 | 14,900 | 115 | 0.002 | 0.015 | 11,100 | 55 | 0.002 | 0.015 |
| 〃 | 12 | 13,800 | 110 | 0.001 | 0.010 | 13,800 | 70 | 0.001 | 0.010 | 10,350 | 35 | 0.001 | 0.010 |
| R 0.4 | 2 | 27,000 | 1,600 | 0.040 | 0.170 | 23,500 | 1,000 | 0.020 | 0.120 | 17,500 | 500 | 0.020 | 0.120 |
| 〃 | 4 | 27,000 | 1,200 | 0.025 | 0.135 | 23,500 | 600 | 0.012 | 0.095 | 17,500 | 300 | 0.012 | 0.095 |
| 〃 | 6 | 23,000 | 600 | 0.012 | 0.095 | 20,500 | 400 | 0.006 | 0.065 | 15,500 | 200 | 0.006 | 0.065 |
| 〃 | 8 | 18,000 | 375 | 0.007 | 0.070 | 17,000 | 285 | 0.005 | 0.060 | 12,750 | 140 | 0.005 | 0.060 |
| 〃 | 10 | 14,700 | 340 | 0.005 | 0.060 | 14,650 | 225 | 0.004 | 0.050 | 11,000 | 110 | 0.004 | 0.050 |
| R 0.5 | 2 | 24,000 | 2,000 | 0.100 | 0.300 | 21,000 | 1,750 | 0.050 | 0.200 | 16,000 | 875 | 0.050 | 0.200 |
| 〃 | 3 | 24,000 | 2,000 | 0.050 | 0.200 | 21,000 | 1,750 | 0.030 | 0.170 | 16,000 | 875 | 0.030 | 0.170 |
| 〃 | 4 | 24,000 | 2,000 | 0.050 | 0.200 | 21,000 | 1,750 | 0.030 | 0.170 | 16,000 | 875 | 0.030 | 0.170 |
| 〃 | 5 | 24,000 | 2,000 | 0.050 | 0.200 | 21,000 | 1,750 | 0.030 | 0.170 | 16,000 | 875 | 0.030 | 0.170 |
| 〃 | 6 | 21,500 | 1,250 | 0.030 | 0.170 | 19,700 | 1,050 | 0.025 | 0.150 | 14,500 | 525 | 0.025 | 0.150 |
| 〃 | 8 | 18,500 | 580 | 0.015 | 0.120 | 18,400 | 480 | 0.015 | 0.120 | 13,800 | 240 | 0.015 | 0.120 |
| 〃 | 10 | 14,800 | 430 | 0.010 | 0.090 | 14,700 | 360 | 0.010 | 0.090 | 11,100 | 180 | 0.010 | 0.090 |
| 〃 | 12 | 13,400 | 380 | 0.008 | 0.080 | 13,300 | 290 | 0.008 | 0.080 | 9,950 | 140 | 0.008 | 0.080 |
| 〃 | 14 | 12,000 | 350 | 0.007 | 0.080 | 12,000 | 220 | 0.007 | 0.080 | 9,000 | 110 | 0.007 | 0.080 |
| 〃 | 16 | 10,500 | 250 | 0.005 | 0.045 | 10,500 | 160 | 0.005 | 0.045 | 7,850 | 80 | 0.005 | 0.045 |
| 〃 | 18 | 9,750 | 200 | 0.004 | 0.035 | 9,750 | 130 | 0.004 | 0.035 | 7,300 | 85 | 0.004 | 0.035 |
| 〃 | 20 | 9,000 | 150 | 0.003 | 0.020 | 9,000 | 100 | 0.003 | 0.020 | 6,750 | 50 | 0.003 | 0.020 |
| 〃 | 22 | 9,000 | 110 | 0.002 | 0.012 | 9,000 | 75 | 0.002 | 0.012 | 6,750 | 35 | 0.002 | 0.012 |
| R 0.6 | 6 | 20,000 | 2,000 | 0.060 | 0.240 | 17,500 | 1,750 | 0.036 | 0.200 | 13,100 | 875 | 0.036 | 0.200 |
| 〃 | 8 | 16,600 | 900 | 0.025 | 0.170 | 15,850 | 750 | 0.025 | 0.170 | 11,900 | 375 | 0.025 | 0.170 |
| 〃 | 10 | 15,500 | 580 | 0.015 | 0.130 | 15,350 | 480 | 0.015 | 0.130 | 11,500 | 240 | 0.015 | 0.130 |
| R 0.7 | 8 | 15,350 | 1,250 | 0.040 | 0.230 | 14,050 | 1,050 | 0.030 | 0.200 | 10,550 | 525 | 0.030 | 0.200 |
| R 0.75 | 3 | 17,000 | 2,000 | 0.120 | 0.400 | 15,000 | 1,750 | 0.060 | 0.290 | 11,250 | 875 | 0.060 | 0.290 |
| 〃 | 4 | 17,000 | 2,000 | 0.120 | 0.400 | 15,000 | 1,750 | 0.060 | 0.290 | 11,250 | 875 | 0.060 | 0.290 |
| 〃 | 6 | 17,000 | 2,000 | 0.070 | 0.310 | 15,000 | 1,750 | 0.040 | 0.240 | 11,250 | 875 | 0.040 | 0.240 |
| 〃 | 8 | 15,000 | 1,250 | 0.045 | 0.250 | 14,000 | 1,050 | 0.030 | 0.210 | 10,500 | 525 | 0.030 | 0.210 |
| 〃 | 10 | 15,000 | 1,250 | 0.045 | 0.250 | 14,000 | 1,050 | 0.030 | 0.210 | 10,500 | 525 | 0.030 | 0.210 |
| 〃 | 12 | 13,000 | 580 | 0.020 | 0.170 | 13,000 | 480 | 0.020 | 0.170 | 9,750 | 240 | 0.020 | 0.170 |
| 〃 | 14 | 10,900 | 485 | 0.015 | 0.145 | 10,900 | 385 | 0.015 | 0.145 | 8,200 | 190 | 0.015 | 0.145 |
| 〃 | 16 | 8,850 | 390 | 0.012 | 0.130 | 8,800 | 290 | 0.012 | 0.130 | 6,600 | 145 | 0.012 | 0.130 |
| 〃 | 20 | 8,000 | 350 | 0.010 | 0.120 | 8,000 | 220 | 0.010 | 0.120 | 6,000 | 110 | 0.010 | 0.120 |
| R 0.8 | 8 | 17,500 | 2,100 | 0.080 | 0.320 | 15,300 | 1,800 | 0.050 | 0.275 | 11,500 | 900 | 0.050 | 0.275 |
| 〃 | 12 | 13,500 | 600 | 0.024 | 0.190 | 13,400 | 490 | 0.024 | 0.190 | 10,050 | 245 | 0.025 | 0.190 |
| 〃 | 16 | 10,800 | 450 | 0.016 | 0.150 | 10,700 | 370 | 0.016 | 0.150 | 8,000 | 185 | 0.016 | 0.150 |
| R 1 | 4 | 14,000 | 2,100 | 0.150 | 0.500 | 12,250 | 1,800 | 0.080 | 0.350 | 9,200 | 900 | 0.080 | 0.350 |
| 〃 | 6 | 14,000 | 2,100 | 0.100 | 0.400 | 12,250 | 1,800 | 0.060 | 0.300 | 9,200 | 900 | 0.060 | 0.300 |
| 〃 | 8 | 14,000 | 2,100 | 0.100 | 0.400 | 12,250 | 1,800 | 0.060 | 0.300 | 9,200 | 900 | 0.060 | 0.300 |
| 〃 | 10 | 14,000 | 2,100 | 0.100 | 0.400 | 12,250 | 1,800 | 0.060 | 0.300 | 9,200 | 900 | 0.600 | 0.300 |
| 〃 | 12 | 12,400 | 1,350 | 0.060 | 0.340 | 11,500 | 1,100 | 0.045 | 0.270 | 8,650 | 550 | 0.045 | 0.270 |
| 〃 | 14 | 12,400 | 1,350 | 0.060 | 0.340 | 11,500 | 1,100 | 0.045 | 0.270 | 8,650 | 550 | 0.045 | 0.270 |

# 2JJRB Cutting Condition

• RPM : rev./min • Feed : mm/min

| 피삭재 Material | | 고경도강 Hardened Steels | | | | 고경도강 Hardened Steels | | | | 고경도강 Hardened Steels | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 경도 Hardness | | 55 ~ 62HRC | | | | 62 ~ 66HRC | | | | 66 ~ 70HRC | | | |
| 반경 Radius | 유효장 Effective Length | RPM | FEED | Ap Axial Depth | Ae Radial Depth | RPM | FEED | Ap Axial Depth | Ae Radial Depth | RPM | FEED | Ap Axial Depth | Ae Radial Depth |
| 〃 | 16 | 10,800 | 600 | 0.030 | 0.240 | 10,700 | 490 | 0.030 | 0.240 | 8,000 | 245 | 0.030 | 0.240 |
| 〃 | 18 | 9,700 | 520 | 0.025 | 0.220 | 9,650 | 430 | 0.025 | 0.220 | 7,250 | 215 | 0.025 | 0.220 |
| 〃 | 20 | 8,650 | 450 | 0.020 | 0.190 | 8,560 | 370 | 0.020 | 0.190 | 6,400 | 185 | 0.020 | 0.190 |
| 〃 | 22 | 8,200 | 440 | 0.018 | 0.180 | 8,200 | 330 | 0.018 | 0.180 | 6,150 | 165 | 0.018 | 0.180 |
| 〃 | 25 | 7,800 | 440 | 0.016 | 0.160 | 7,800 | 290 | 0.016 | 0.160 | 5,850 | 145 | 0.016 | 0.160 |
| 〃 | 30 | 7,000 | 350 | 0.014 | 0.160 | 7,000 | 220 | 0.014 | 0.160 | 5,250 | 110 | 0.014 | 0.160 |
| R 1.25 | 20 | 9,600 | 630 | 0.040 | 0.310 | 9,600 | 510 | 0.040 | 0.310 | 7,200 | 255 | 0.040 | 0.310 |
| R 1.5 | 6 | 10,500 | 2,200 | 0.200 | 0.700 | 9,200 | 1,900 | 0.120 | 0.550 | 6,900 | 950 | 0.120 | 0.550 |
| 〃 | 8 | 10,500 | 2,200 | 0.200 | 0.700 | 9,200 | 1,900 | 0.120 | 0.550 | 6,900 | 950 | 0.120 | 0.550 |
| 〃 | 10 | 10,500 | 2,200 | 0.150 | 0.650 | 9,200 | 1,900 | 0.100 | 0.500 | 6,900 | 950 | 0.100 | 0.500 |
| 〃 | 12 | 10,500 | 2,200 | 0.150 | 0.650 | 9,200 | 1,900 | 0.100 | 0.500 | 6,900 | 950 | 0.100 | 0.500 |
| 〃 | 16 | 10,500 | 2,200 | 0.150 | 0.650 | 9,200 | 1,900 | 0.100 | 0.500 | 6,900 | 950 | 0.100 | 0.500 |
| 〃 | 20 | 9,250 | 1,400 | 0.100 | 0.500 | 8,600 | 1,150 | 0.075 | 0.450 | 6,450 | 575 | 0.075 | 0.450 |
| 〃 | 25 | 8,000 | 630 | 0.050 | 0.380 | 8,000 | 510 | 0.050 | 0.380 | 6,000 | 255 | 0.050 | 0.380 |
| 〃 | 30 | 5,750 | 450 | 0.030 | 0.290 | 5,700 | 370 | 0.030 | 0.290 | 4,275 | 185 | 0.030 | 0.290 |
| 〃 | 35 | 5,350 | 440 | 0.025 | 0.270 | 5,350 | 310 | 0.025 | 0.270 | 4,000 | 155 | 0.025 | 0.270 |
| 〃 | 40 | 4,900 | 390 | 0.200 | 0.240 | 4,950 | 250 | 0.020 | 0.240 | 3,700 | 125 | 0.020 | 0.240 |
| R 2 | 8 | 9,000 | 2,300 | 0.250 | 0.950 | 7,900 | 2,000 | 0.150 | 0.750 | 5,900 | 1,000 | 0.150 | 0.750 |
| 〃 | 10 | 9,000 | 2,300 | 0.250 | 0.950 | 7,900 | 2,000 | 0.150 | 0.750 | 5,900 | 1,000 | 0.150 | 0.750 |
| 〃 | 12 | 9,000 | 2,300 | 0.200 | 0.850 | 7,900 | 2,000 | 0.130 | 0.700 | 5,900 | 1,000 | 0.130 | 0.700 |
| 〃 | 16 | 9,000 | 2,300 | 0.200 | 0.850 | 7,900 | 2,000 | 0.130 | 0.700 | 5,900 | 1,000 | 0.130 | 0.700 |
| 〃 | 20 | 9,000 | 2,300 | 0.200 | 0.850 | 7,900 | 2,000 | 0.130 | 0.700 | 5,900 | 1,000 | 0.130 | 0.700 |
| 〃 | 25 | 8.000 | 1,450 | 0.130 | 0.700 | 7,450 | 1,250 | 0.090 | 0.550 | 5,600 | 625 | 0.090 | 0.550 |
| 〃 | 30 | 7,000 | 660 | 0.060 | 0.450 | 7,000 | 540 | 0.060 | 0.450 | 5,250 | 270 | 0.060 | 0.450 |
| 〃 | 35 | 6,000 | 630 | 0.055 | 0.430 | 6,000 | 510 | 0.055 | 0.430 | 4,500 | 255 | 0.055 | 0.430 |
| 〃 | 40 | 4,300 | 450 | 0.040 | 0.390 | 4,300 | 370 | 0.040 | 0.390 | 3,200 | 185 | 0.040 | 0.390 |
| R 2.5 | 20 | 7,200 | 2,300 | 0.250 | 1.050 | 6,350 | 2,000 | 0.160 | 0.880 | 4,750 | 1,000 | 0.160 | 0.880 |
| 〃 | 30 | 6,400 | 1,450 | 0.160 | 0.880 | 6,200 | 1,250 | 0.110 | 0.730 | 4,650 | 625 | 0.110 | 0.730 |
| 〃 | 40 | 6,000 | 690 | 0.080 | 0.625 | 6,000 | 570 | 0.080 | 0.625 | 4,500 | 285 | 0.080 | 0.625 |
| R 3 | 15 | 6,500 | 2,500 | 0.300 | 1.300 | 5,700 | 2,200 | 0.200 | 1.000 | 4,300 | 1,100 | 0.200 | 1.000 |
| R 4 | 25 | 5,200 | 2,200 | 0.400 | 1.700 | 4,500 | 1,900 | 0.250 | 1.350 | 3,400 | 950 | 0.250 | 1.350 |
| R 5 | 30 | 4,300 | 2,000 | 0.500 | 2.100 | 3,750 | 1,750 | 0.300 | 1.700 | 2,800 | 875 | 0.300 | 1.700 |
| R 6 | 30 | 3,600 | 1,750 | 0.600 | 2.600 | 3,150 | 1,500 | 0.350 | 2.000 | 2,350 | 750 | 0.350 | 2.000 |

**절입량** Depth of Cut




Ap : Axial Depth 축방향의절입깊이(mm)
Ae : Radial Depth 반경방향의절입깊이(mm)
D : Outside Diameter 외경(mm)
n : Speed 회전속도 ($min^{-1}$)
Vf : Feed 이송속도 (mm/min)

- HRC55 이하 피삭재(합금강, 공구강) 가공시 같은 파이에 대비 상기절삭조건의 20% UP 해주십시오.
- 에어브로 혹은 미스트 쿨런트를 추천하며, 동 가공시 습식 쿨런트 추천 합니다.
- 이 절삭 조건표는 절삭조건의 참고 수치입니다. 실가 공시 가공 형상, 가공 목적, 적용 기계에 따라 조건 변경 요망합니다.
- 진동이 적고 강성이 좋은 공작 기계 사용 요망 합니다(Ø1 이하 사용 시 진동 허용 관리 5㎛ 이내일 것.)
- 칩 제거 주의 및 가 공시 발열, 발화에 주의하십시오.

- When milling workpiece HRC below 55 (Alloy steel, tool steel), Raise up 20% RPM and feed compared to the same diameter.
- Air blow or mist coolant is recommended, and wet coolants are recommended for copper milling.
- Use this table for your reference. Adjust the parameters depending on your machining geometry, machining purpose and CNC.
- Use a machine with low vibration and good rigidity (Ø1 or less, the vibration tolerance management will be within 5㎛).
- Note for chip emission, heat, or ignition.

# Your specials are our standards.

## *당신의스페셜은우리의표준품입니다.*

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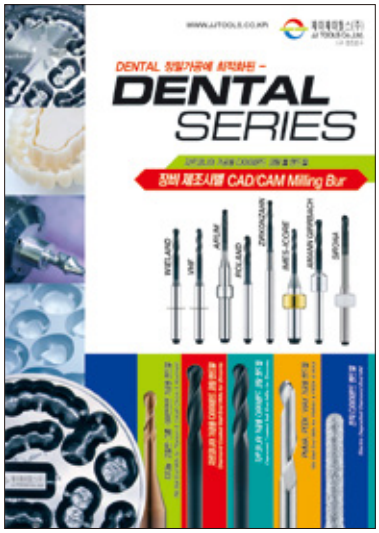



제이제이툴스(주)
JJ TOOLS Co.,Ltd.
31, Dusan-ro, Geumcheon-gu, Seoul,
Republic of Korea Tel. +82.2.808.2745
Fax. +82.2.808.2746 www.jjtools.co.kr

ISO 9001 ISO 14001

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ISO 품질·환경 경영시스템 인증을 획득하였습니다.